

REMARKS

This paper is responsive to an Office Action mailed September 13, 2006. On August 29, 2006 an election was made, in response to a restriction requirement. The Applicant reaffirms that Group 1 claims, claims 1-22 and 62, drawn to a sensor structure, are elected. Claims 23-62 are canceled without traverse. After amending claims 1, 6-18, 21, and 62, canceling claim 5, and adding claims 63-64, claims 1-4, 6-22, and 62-64 remain pending.

Section 5 of the Office Action states that claim 62 has been rejected under 35 U.S.C. 102(b) as anticipated by Shih (US 5,081,422). The Office Action states that Shih discloses a 3D detection field in a material such as plywood or tar paper. This rejection is traversed as follows.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Applicant's claim 62 has been amended to recite that the 3D detection field is comprised of a first and second plurality of pins, extending from electrically conductive traces, where each pin is at least partially covered with an electrical insulator. This subject matter was initially introduced in Applicant's claims 5, 10, and 18, prior to this amendment. In Fig. 5 Shih discloses the use of two sensing wires 59 and 60. Metal positioning pins 61,62 and 63,64 are used to used to make an intimate contact between the sensing wires and a plywood sheet 65.

Shih is absolutely silent on the subject of insulating, or partially insulating his positioning pins. Since Shih does not explicitly teach partially insulating his positioning pins, he does not disclose every limitation of claim 62, as amended. Therefore, Shih does not anticipate claim 62, and the Applicant respectfully requests that the rejection be removed.

In Section 7 of the Office Action, claims 1-3 and 62 have been rejected under 35 U.S.C. 102(e) as anticipated by Amacher (US 6,995,676). With respect to claims 1 and 62, the Office Action states that Amacher discloses a 3D detection field (x-y-z coordinate sensing).

Claim 1 has been amended to include the subject matter of claim 5, now canceled, and part of the subject matter of claims 10 and 18. Claim 1 now recites that the first and second pluralities of pins extend from an electrically conductive trace, and are at least partially covered with an electrical insulator. Claim 62 is amended similarly.

Amacher discloses a moisture sensor 25, with electrical conductive leads 40A and 40B, that is formed on a pliable substrate 45 (col. 6, ln. 4-58, Figs. 4-7). Amacher does not describe or show pins extending from his electrically conductive leads. Since Amacher does not teach the use of pins to form a 3D detection field, he likewise cannot teach the use of partially insulated pins.

Therefore, Amacher does not teach all the limitations of claims 1 and 62, as amended. Since Amacher does not explicitly disclose all the limitations of claims 1 and 62, he cannot anticipate these claims. Claims 2-3, dependent from claim 1, enjoy the same distinctions from the cited prior art, and the Applicant requests that the rejection be removed.

Section 9 of the Office Action states that claims 1-20 and 22 have been rejected under 35 U.S.C. 103(a) as unpatentable with respect to Shih in view of Amacher. The Office Action acknowledges that Shih fails to disclose an electrical connector, but that it would have been obvious, in view of Amacher to modify Shih to include a connector. With respect to claim 18, the Office Action acknowledges that Shih fails to disclose a pin where the distal end is covered by an electrical insulator, but that it is known to strip the insulation from wire to make electrical connections. "In this situation, one of ordinary skill in the art would desire to insulate the distal end by using an insulator covering distal end and expose the proximal end for conductivity as a matter of design choice." This rejection is traversed as follows.

An invention is unpatentable if the differences between it and the prior art would have been obvious at the time of the invention. As stated in MPEP § 2143, there are three requirements to establish a *prima facie* case of obviousness.

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck* 947 F.2d 488, 20 USPQ2d, 1438 (Fed. Cir. 1991).

As noted above, Applicant's claim 1 has been amended to recite that the first and second pluralities of pins are at least partially covered with an insulator. As noted in the Applicant's specification on

page 10, lines 11-17, when the distal end is covered, the pins from the sensor can be inserted through a first medium, to monitor an adjacent second medium. This arrangement permits the sensor to be triggered if the second medium gets wet. However, moisture in the first medium will not trigger the sensor. If pushed into a carpet, such a sensor would *not* be triggered in response to a drink being spilled, or the carpet cleaned. However, the sensor would trigger if the padding under the carpet was to get wet, due to a crack in the concrete slab for example. Alternately, if the proximal ends of the pins are insulated, they may be driven into a second (distant) medium for mechanical support, but only moisture in the first (adjacent) medium will cause the sensor to trigger.

With respect to the first *prima facie* requirement, the motivation to modify Shih positioning pins is not supported by the statements that it is known to strip insulation from a wire, or that the decision to insulate the pins would have been a "design choice". These explanations do not show how an expert would have derived the motivation to change Shih's pins from completely conductive to partially insulated pins. That is, the Office Action must show why the Shih and/or Amacher references would suggest a sensor that can be used to monitor either a directly adjacent (first) medium, or a remote (second) medium through the use of partially insulated pins. Neither reference describes the desirability of such a sensor, or the means to enable such a sensor.

The legal concept of *prima facie* obviousness is a procedural tool of examination which applies broadly to all arts. It allocates who has the burden of going forward with production of evidence in each step of the examination process. See *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *In re Linter*, 458 F.2d 1013, 173 USPQ 560 (CCPA

1972); *In re Saunders*, 444 F.2d 599, 170 USPQ 213 (CCPA 1971); *In re Tiffin*, 443 F.2d 394, 170 USPQ 88 (CCPA 1971), *amended*, 448 F.2d 791, 171 USPQ 294 (CCPA 1971); *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967), *cert. denied*, 389 U.S. 1057 (1968).

The CAFC has consistently found over the years that a *prima facie* case for obvious must be based upon a detailed analysis of how and why an expert could excerpt known art to make modifications to a cited prior art reference. In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art reference for combination in the manner claimed." *In re Rouffet*, 47 USPQ2d 1453, 1457-1458 (1998).

In the present case, the Applicant submits that a *prima facie* case has not been made to support the rejection of the subject matter claims 18, and amended claim 1. With respect to the second *prima facie* requirement, the Office Action provides absolutely no evidence of an expectation of success.

With respect to the third *prima facie* requirement, even if the references are combined, they do not disclose all the elements of the claimed invention. As noted above in response to the anticipation rejections, neither Amacher nor Shih disclose the use of pins partially covered with an electrical insulator, as recited in Applicant's claim 1. Further, a *prima facie* case has not been made that these missing limitation are suggested or made obvious by the prior art references. Claims 2-4, 6-20, and 22, dependent from claim 1, all enjoy the same distinctions from the prior art, and Applicant requests that the rejection be removed.

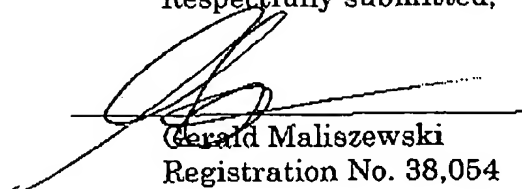
The Office Action states that claim 21 would be found allowable if rewritten in independent form, including all the subject matter of the base and intervening claims.

New claim 64 has been added which recites the first and second pluralities of pins extending from the electrically conductive traces in an axis aligned with a first plane. In the rejection of claim 18, the Office Action states that Shih shows each pin aligned in a first plane as defined by the plywood surface. In response, the Applicant submits that the alignment of pins in claim 64 is *not* dependent upon a mating surface, or a human laborer installing the pins. Shih discloses no means of guarantying that each positioning pin is driven into the plywood at an identical angle, as would be required to read upon the Applicant's claim. Further, Shih discloses no means of guarantying that the positions pins associated with line 59 are driven in at the same angle as the pins associated with line 60 (e.g., the wires may be arranged over different sheets of plywood). Alternately stated, Shih's pins each have an eye that permits the pin to freely rotate. Shih's rotating pin is not described by the limitation of a pin that extends from a trace in a fixed (first) plane.

It is believed that the application is in condition for allowance and reconsideration is earnestly solicited.

Respectfully submitted,

Date: 12/12/2006


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